

MARINE REVIEW.

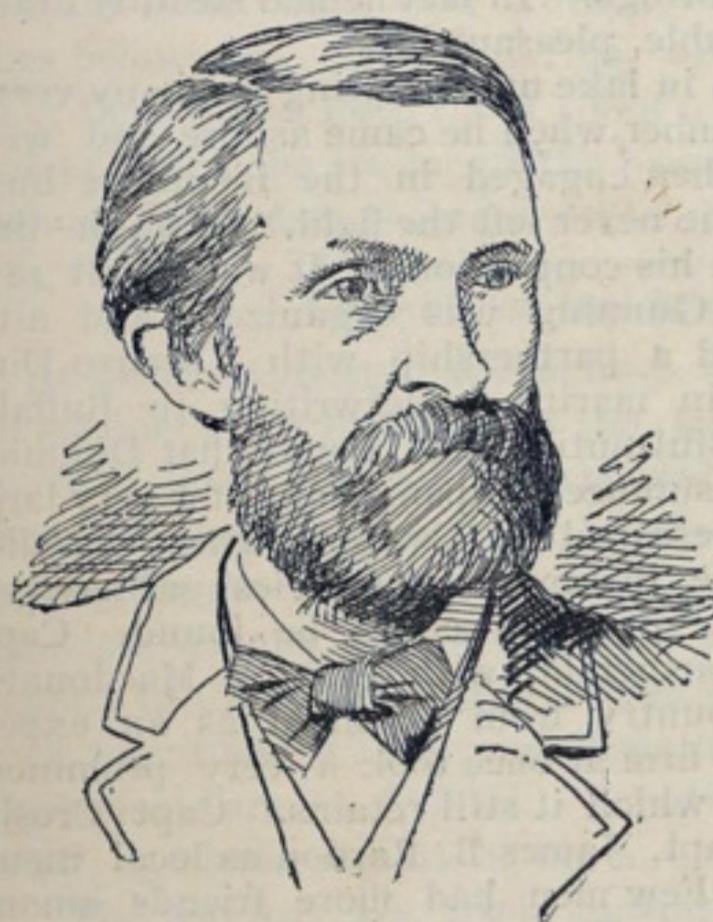
VOL. V.

CLEVELAND, OHIO, THURSDAY, JUNE 9, 1892.

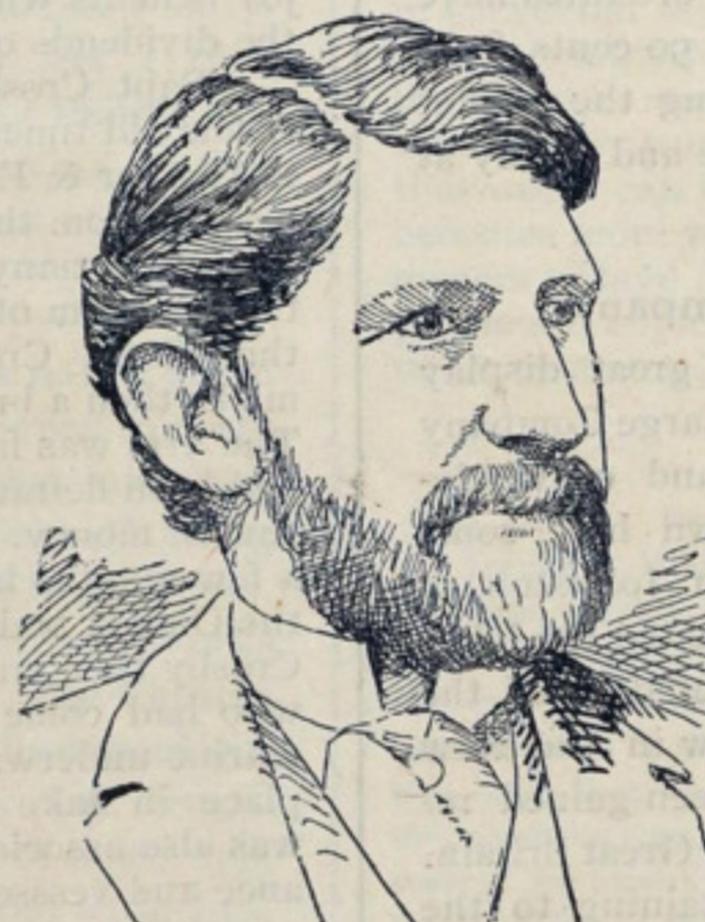
No. 24.

Able Advocates of Lake Marine Interests.

Portraits of three Ohio men in the present congress, who have been especially active in supporting legislation for the advancement of the lake marine, are presented on this page. They are Senator Calvin S. Brice, and Congressmen Vincent A. Taylor and Tom L. Johnson. In commending the work of these Ohio representatives there is no intention of detracting from the credit due the members of congress from other lake districts, whose services are equally appreciated. Mr. Taylor was the originator of the excursions of congressmen and newspaper representatives on the lakes last summer, and has been an untiring worker in behalf of lake commerce since that time. Since his election to the senate Mr. Brice has shown an active interest in the river and harbor matters. He secured the passage of the light-house measure now pending in the house and has on all occasions shown an earnest desire to further waterway improvements.



CONGRESSMAN VINCENT A. TAYLOR.



SENATOR CALVIN S. BRICE.



CONGRESSMAN TOM L. JOHNSON.

Six New Steamers—Largest on the Lakes.

Among the new fleet that is coming and will continue to come from lake shipyards during the summer, there are six steel steamers that will be larger than any vessels now on the lakes. One is expected to carry 4,000 tons and the others from 3,000 to 3,500 tons on 14 feet, the present Lake Superior draft. On 16 feet the "straight-back" will, it is said, carry 5,000 tons, while others on this draft will probably carry about 3,500 or 4,000 tons. For several years past the Union line steamers Owego and Chemung, counterparts, have been distinguished as the largest boats on the lakes.

Dimensions of the Owego and Chemung are: 350 feet 7 inches over all, 324 feet 10 inches keel, 41 feet beam and 25 feet 6 inches deep. These boats have engines 28, 42 and 72 by 54 inches, so that in power they will not be outstripped by anything now building, but as shown in the following description of six steamers now about ready for service the Union liners are destined to an inferior position in the matter of general dimensions:

"Straightback," building by Detroit Dry Dock Company for Eddy Bros., Saginaw: 360 feet over all, 42 feet beam and 24

feet deep; engines same size as those of steamer E. C. Pope, which are 22, 35 and 56 by 44 inches.

Two boats for the Minnesota Steamship Company of Cleveland, Mariposa and Maritana, building by the Globe Iron Works Company of Cleveland and Chicago Ship Building Company: 350 feet over all, 330 feet keel, 45 feet beam and 24½ feet deep; engines 24, 39 and 63 inches by 48 inches and three boilers.

Pathfinder, building by the American Steel Barge Company, West Superior, Wis., for Samuel Mather, Cleveland, O.: 340 feet over all, 325 feet keel, 42 feet beam and 25 feet deep; engines 23, 37 and 62 inches by 42 inches, three boilers.

Monitor building by the Cleveland Ship Building Company on their own account: 340 feet over all, 324 feet keel, 42 feet beam and 24 feet deep; engines 20, 33 and 54 inches by 40 inches stroke.

W. H. Gilbert, Hallenbeck-Hollister boat, building by F. W. Wheeler & Co., West Bay City, Mich: 345 feet over all, 318

feet keel, 42 feet beam and 25½ feet deep; engines 23, 37 and 62 inches by 42 inches.

Water bottoms in all these steamers will be 4½ feet deep. These figures point clearly to one thing, that is that the day of small steamers is past. It may be noticed that three are of the new style of cheap cargo carriers, known by the names monitor, straightback and whaleback, while the other three, the Minnesota boats and the Gilbert, are of the steamship style.

Congress on Inland Navigation.

President Staley of the Case School of Applied Science of Cleveland will represent the Civil Engineers' Club of Cleveland in the international congress on inland navigation to be held in Paris July 21 to 30 inclusive. It is expected that the American representation in the congress will be very large this year. Mr. E. L. Correll of Chicago, Mr. Schenck and John Bogart, who are prominent in the association of civil engineers, are among the authors mentioned in connection with the congress. The congress last year was held in Manchester, Eng.

An article of special merit in the June number of the Engineering magazine is entitled "The Modern Marine Boiler." The author, A. B. Willits, U. S. N., bases the article on a very clear description of one of the main boilers, Scotch type, of the United States man-of-war New York, now in course of completion in Philadelphia.

A Powerful Organization.

The new Lake Carriers' Association, organized a few weeks ago through a consolidation of the old organization known under the same name and the Cleveland Vessel Owners' Association, now represents through its membership 585 vessels, having an aggregate net registered tonnage of 550,539 tons and valued in the Inland Lloyds Register at \$40,055,300. Following is a summary of the tonnage:

	Steam.	Sail.	Total.
Number of vessels.....	353	232	585
Net registered tonnage.....	408,968	141,571	550,539
Insurance valuation.....	\$34,939,500	\$5,115,800	\$40,055,300

On the 18th inst. the membership books of the association will be closed for the year, and a statement that will very probably be made at that time by secretary Keep will show an increase in the above figures, which do not include 15,000 tons or more in new vessels now about ready for launching. Other vessels from which applications are expected before the 18th will very probably swell the aggregate to about 600,000 tons.

Lake Freight Matters.

Iron ore dealers have been selling some non-Bessemer ores right along of late, and although sales are in most cases at figures a little below last year's prices, it can be said that the market for raw material in iron has at least improved to the extent that there is a fair volume of business being done. This has caused the ore dealers to be of considerable assistance in maintaining lake freight rates. Ore shipments for June, or the present half of it at least, will be heavy in the aggregate. Notwithstanding the suspension of grain shipments, ore rates have held during the week at 65 cents from Escanaba, 90 cents from Marquette and \$1 from Ashland, and at this writing the market is strong at these figures. Coal freights are active and steady at the rates that have ruled for several weeks past.

English Connections of the Barge Company.

A New York dispatch of recent date makes a great display of the announcement that the American Steel Barge Company has arranged plans for the construction in England of whaleback barges for Atlantic service. It was known here some weeks ago that such was the case, when William Johnston of William Johnston & Co., Limited, of London visited the lakes and spent some time in negotiations with the officers of the barge company, and although there is nothing new in the New York announcement, some additional facts have been gained regarding plans for the introduction of the barges in Great Britain. Mr. Johnston left here with an understanding pertaining to the formation of a company for the construction and operation of the barges in the trans-Atlantic trade. Capitalists in the barge company here, chief among whom are John D. Rockefeller, Colgate Hoyt and Joseph H. Colby, will, of course, be interested in the English company, but as yet the plans have not matured sufficiently to warrant very much being said of its success. The firm of Wm. Johnston & Co., Limited, has houses in Liverpool, London, and Manchester, Boston and Chicago. The Johnston line has a weekly boat from London to Boston and from both Liverpool and London to Baltimore the service is also weekly. Close business relations with the Baltimore and Ohio Railway is a feature of the company's success in this country. Its business is not confined to boats running from Baltimore and Boston but extends to all principal points in Canada, Nova Scotia and New Brunswick and to the Black sea. The company is one of the leading shipping concerns in England, and if the barges can be adapted to ocean service the American owners of the patients have undoubtedly formed a sound connection abroad. It is intended to build oil tank barges of the whaleback type for the Black sea trade.

Capt. Alex. McDougall is now at Everett, the new barge town on Puget sound where two steamers are under way. It is

very probable that marked changes will be made in the bows of the steamers for the Pacific coast trade, as it has been shown in the case of the Wetmore that the present form of bow is a weak part of the vessel, especially when running light, and additional water ballast space forward will hardly remedy this defect.

Late Capt. Thos. G. Crosby.

Death has removed another landmark, so to speak, from among Chicago's marine men. Thomas G. Crosby, after a heroic struggle of over a year with cancer in the throat, succumbed to that dread disease Monday morning. Capt. Crosby's heroism under that most awful scourge was not less than the courageous fight that Gen. Grant made when afflicted in the same way. It was over a year ago that Capt. Crosby began being troubled with something in his throat. He called it neuralgia, but finally went to a noted specialist in New York city, who told him it was not neuralgia, but a malignant cancer. Most men would have been cast down by this awful announcement, but Capt. Crosby, so far as the people who visited him in his office could see, simply ignored his impending fate. His visitors were greeted with the same old genial smile, the same hearty hand shake. The subject was a tabooed one in the office, and was never mentioned. About six months ago Capt. Crosby was unable to give any attention to business, and from that time until his death he went here and there only seeking to alleviate pain.

The friends of the dead man, while most sincerely regretting his death, say that he had his full share of life's enjoyment. He had been successful in business, and he had not waited until he had accumulated a vast fortune before he had begun to enjoy benefits which wealth brings. In fact he had steadily drawn the dividends of a comfortable, pleasant life.

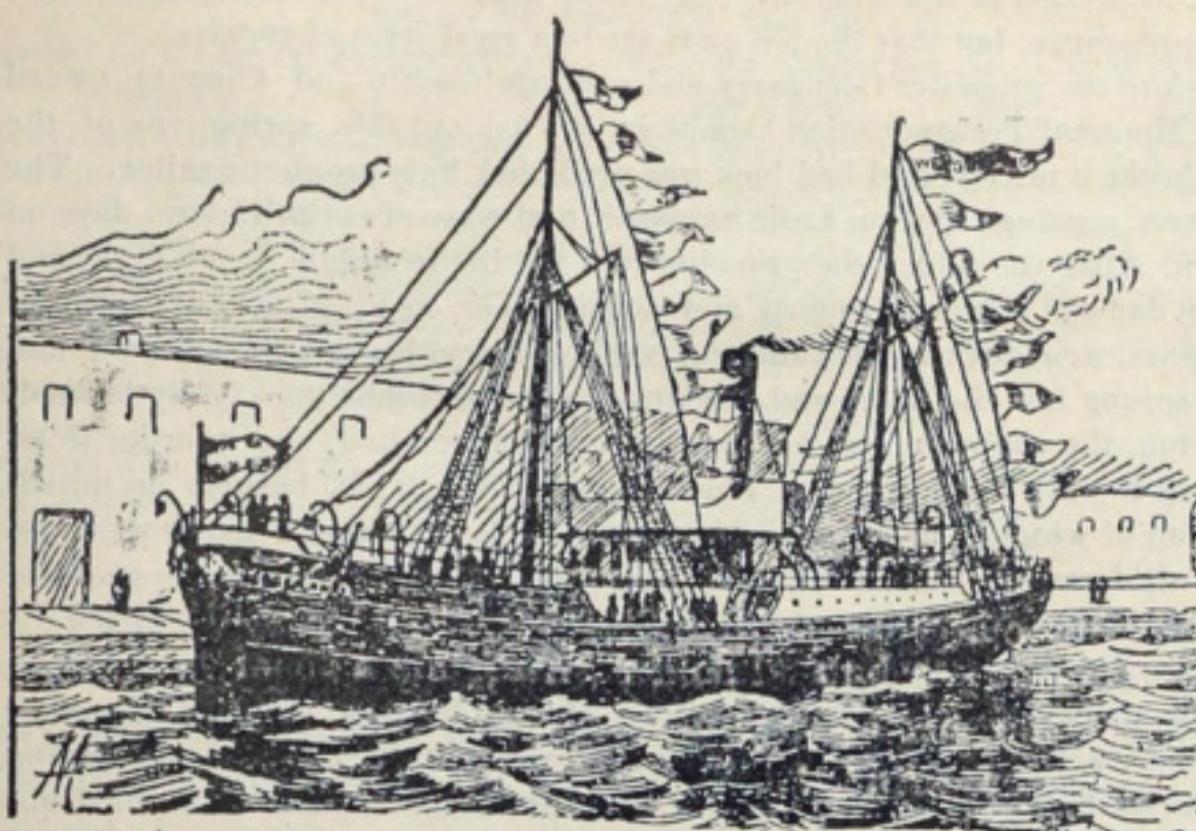
Capt. Crosby had been in lake underwriting for many years. A few old-timers can remember when he came ashore and went to Walker & Eusterphie, then engaged in the insurance business. From that time on he never left the field, although time had made many changes in his connections. It was about 1876 that the firm of Crosby & Gunning was organized, and after that Capt. Crosby formed a partnership with Lorenzo Dimmick, then a bright light in marine underwriting in Buffalo. The firm was fairly successful until it was found that Dimmick had been defrauding the insurance companies out of a very large sum of money. Dimmick escaped to Canada, where he died a few months later, and the insurance companies gathered in the Oneida and what other property could be found. Capt. Crosby then entered into partnership with Chas. A. Macdonald, who had come to this country from Scotland as an expert marine underwriter. This firm at once took a very prominent place in lake insurance, which it still retains. Capt. Crosby was also associated with Capt. James B. Rardon as local insurance and vessel agents. Few men had more friends among vessel owners of the lakes than Capt. Crosby. He was eminently a "good fellow." He made friends naturally and seldom lost them. The Chicago Board of Marine Underwriters, of which he had been a member since its organization, took very fitting action on his demise Monday. Wednesday the funeral services were held at his residence near the lake shore in Lake View, a large number of marine men being present to pay their last respects.

Total Losses.

It is more than probable that the steamer Progress, sunk at Mamajuda island, Detroit river, in collision with the steamer Briton, will prove a total loss. From Racine the loss of the small schooner Persia is reported. She was owned by S. L. Martin of Racine and valued at \$1,000. The Canadian steamer Kincardine, with a cargo of salt, was beached in Winfield Basin, 20 miles west of Tobermoray, Ont., Thursday night, and was broken up by the heavy seas running at the time. The measurement of the Kincardine was 191 tons, rating B1 and valuation \$6,000. She was built in 1871.

J. H. Crosby of Boston is an American inventor of a device to regulate the speed of marine engines in times when the propeller is liable to get out of water. Several inventions of this kind are on the market in England. It is said that Cramps will give Mr. Crosby's device a trial in a vessel which they have under construction.

From Norway to the Lakes.



The above engraving shows the steamer Wergeland, which recently arrived at Chicago from Norway, by way of the St. Lawrence and Welland canals, bringing a cargo of fish and oils. Details of the trip, which was unprofitable on account of the necessity of breaking cargo in the St. Lawrence canals, have been given in previous issues of the REVIEW.

Water in the Detroit River.

In February last the water in the Detroit river at Detroit was at times as much as 4 feet 7 inches below what is taken as the zero point, and all through April the level was full 3 feet below the same point. On Tuesday the level was but 1 foot 6 inches below zero. The water is, accordingly, 3 feet 1 inch higher than it was Feb. 1 and 1 foot 6 inches higher than it was April 11, when the steamer Sitka passed down drawing 15 feet 4 inches. This data is obtained from J. W. Westcott at Detroit.

Launch of the Maritana.

At South Chicago, Wednesday, the first of a half a dozen steel steamers now building on the lakes and designed to carry more than 4,000 tons on the proposed deep draft was launched. The boat is the Maritana, built by the Chicago Ship Building Company for the Minnesota Steamship Company. The Mariposa, a duplicate steamer, will be launched by the Globe Iron Works Company in Cleveland within a week or ten days. The Chicago launch was attended by several thousand people. The dimensions of these boats are as follows: Length of keel, 330 feet; length over all, 350 feet; breadth of beam, 45 feet; depth of hold, 24½ feet. The engines are triple expansion, 24, 39 and 63 inches, with 48 inches stroke, steam being furnished from three steel boilers 12 feet in diameter by 12½ feet long.

In General.

Congressman Weadock of Michigan on Tuesday secured the passage of a bill in the House appropriating \$15,000 for the establishment of weather bureau stations on Middle and Thunder bay islands, Lake Huron.

The Senate has passed the bill giving the supervising inspectors of steam vessels power to fill vacancies in local boards in all cases where the board of designators, made up of the district judge, supervising inspector and collector of customs, fails during ten days after having held a meeting to make an appointment.

When asked to mention a reliable firm of attorneys in Washington who can be depended upon to give attention to a question before one of the departments of the general government without any hesitancy we take pleasure in recommending Messrs. Conger & Conger of Washington. The firm is thoroughly acquainted with the lake business and is in every way fitted to secure the best possible results in all matters before Congress or the departments.

No where in this or any other country is package freight handled more rapidly than on the docks of the Northern Steamship Company at Buffalo and Superior. People in the shipping

business elsewhere can hardly be made to believe that cargoes on these boats are carried in the hold as well as between decks, when statements are made regarding dispatch in port. At Superior early last week 22,400 barrels of flour were put on the steamer Northern Wave in 8 hours and 42 minutes. A few days later 2,252 tons of flour and copper matte was put onto the North Star in 7 hours and 15 minutes.

The John Doty Engine Company, Limited, of Toronto has failed. The firm represents one of the best known marine industries of Canada. Notwithstanding that the yards have been kept fairly busy throughout the winter months with the new steamers from the St. Cathrines route and other important contracts, the business seems to have been caught in the general depression and finds itself under temporary financial pressure, but with every prospect of ultimate settlement of all claims at 100 cents on the dollar. The liabilities will probably amount to \$200,000, and the estate will show a nominal surplus.

The steam barge J. C. Pringle of the Hollister Transportation Company, during last year lost about a week with her three consorts owing to a defective air pump. This season she was fitted with the Worthington condenser and on her first trip took 2,500 tons of coal to Racine and brought down 2,650,000 feet of lumber at a speed of seven miles an hour. The new steamer C. F. Bielman, built by F. W. Wheeler of West Bay City this season for Capt. Stewart and others of Detroit, has also been fitted with a Worthington condenser. In this connection it may be mentioned that the Worthington condenser was the first to be adopted on large lake steamers, the Lehigh fleet being the first to be equipped with this excellent auxiliary to triple expansion engines.

Practical Benefit of a Nautical Dictionary.

The chief engineer of one of the largest fleets of steel steamers in Cleveland says that masters and engineers should have a copy of Patterson's Nautical Dictionary, so that in case of accidents to hull or machinery the correct name of part or plate, which is shown by numerous illustrations and described in the text of that work, can be telegraphed to the owner. This suggestion becomes more valuable when it is considered that most of the owners of large fleets in Cleveland, and also at other ports, have purchased copies of the dictionary from the REVIEW. It is valuable to mates looking for papers.

Detroit River Matters.

Special Correspondence to the MARINE REVIEW.

DETROIT, Mich., June 9—The opinion prevails in usually well informed insurance circles here that the abandonment of the Progress will be accepted by the underwriters, but that the insurers will not undertake the recovery of the boat unless the work can be done on a percentage of whatever sum she can afterward be sold for. The expert insurance adjusters and wrecking masters have been to the wreck and have doubtless agreed upon a report, but they made no sign during their brief stay. In the shape of a special dispatch some of the papers of Tuesday published a ridiculous and incorrect report on the condition of the Progress. There was no authority whatever for saying that the "outlook for saving the steamer is bad." The damage to the boat is, of course, very great, but the difficulty and expense of raising her will not be anything approaching that which attended the recovery of the Kasota.

The continued weakening tendency in the lake freight markets is making vesselmen feel pretty blue. They are looking forward with feelings of mingled hope and apprehension. As yet the weakness has had but little effect on rates for carrying lumber, stone and cedar. There is an immense quantity of cedar ties, paving-wood, etc., to be moved from northern Michigan and Ontario, a great deal of it from out of the way places which give employment to a large number of craft, and the trade in these commodities is apparently increasing yearly. The shipment of cedar ties alone has within a very few years assumed great magnitude, and with the disappearance of our supply of white oak timber, must continue to increase for many years to come. There is always something turning up to take the place of that which is disappearing.

Official Numbers and Tonnage.

The bureau of navigation, E. C. O'Brien, commissioner, assigned official numbers to the following lake vessels during the two weeks ending May 28: Steam—Riverside, Buffalo, 124.50 tons gross, 90.11 net, No. 110,974; Columbia, Grand Haven, 139.87 tons gross, 90.78 net, No. 126,961; Deer, Grand Haven, 47.57 tons gross, 24.57 net, No. 157,344; Mocking Bird, Port Huron, 71.74 tons gross, 35.98 net, No. 92,430; Vonito, Port Huron, 73.58 tons gross, 49.24 net, No. 161,686; Pillsbury, Marquette, 2,234.49 tons gross, 1,571.75 net, No. 150,587; Washburn, Marquette, 2,234.49 tons gross, 1,571.75 net, No. 81,373. Sail—John C. Fitzpatrick, Cleveland, 1,270.95 tons gross, 1,207.41 net, No. 77,028.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 13 Western Union Building, CHICAGO, Ill., June 9.

Attorney Kremer says that the \$6,000 paid by the owners of the steamer Kalamazoo toward a mortgage of \$10,000 on the steamer Pilgrim, which they now own, was virtually a donation, as the Pilgrim was at fault beyond doubt, but the Michigan owners of the two boats seem to have been anxious to avoid litigation. If one could know all the facts concerning that collision the case would not be far from this: On a foggy night the Kalamazoo, bound for Chicago from the east shore, and the Pilgrim bound from Chicago to the east shore, crossed each others courses at full speed. The mate on the Pilgrim, who was on duty, had probably been trained on some steamer whose wheel chains were just the opposite from those on the Pilgrim. He sees the two boats bearing down upon each other, and he gives an order to the wheelsman, before his brain has had time to take in the situation. A minute more and he will have remembered how the wheel chains of the steamer are placed. He is like the old soldier who drops a basket of eggs when someone shouts "attention" to him. The fate of the Pilgrim proves conclusively that all steamers of the United States, whether on fresh water or salt, should be steered the same way. If this is not done, no man ought ever to be allowed to serve on boats which steer in a different way. He should be confined to one or the other for his lifetime. Any psychologist will tell you that in moments of great emergency there is no telling which way the mind works, and that it is quite likely to go back to early training, although years have elapsed and the superstructure of later habits and conditions been built over that early training. This was clearly the case of the Pilgrim, and no one knows when some other marine disaster will not follow as two boats confront each other and instantaneous action must be taken.

The smoke consumers are trying another device on a river tug. This time Capt. J. S. Dunham has given them the Miller. The people who are going to do away with smoke in Chicago seem to be working hard enough, but somehow or another they do not accomplish a great deal. The Ewing experiment with steam jets was pronounced by the Society for the Prevention of Smoke a great success, but it has not been adopted on a single tug, simply because it is not adapted for real work, although a fine thing on dress parade.

The Chicago evening papers seem to be in the field of marine news to stay. The Post and Journal only print the passages, and quite frequently they are crowded out. This has caused a scheming newspaper man to figure on a project of an afternoon marine circular, giving the passages, charters and general news of the day. It is said several firms have pledged themselves to its support, but it is doubtful if the scheme could be made to pay. The printing and telegraph bills would be heavy, and the circulation of the circular would be limited. The circular would be issued at about 2 p. m.

Of the principal cereals—wheat, corn, oats, rye and barley—there was shipped out of Chicago in 1891 189,771,182 bushels, and of this amount lake vessels took 96,271,300 bushels, or 50.5 per cent., notwithstanding that twenty-one lines of railway participated in this traffic and the lakes were open to navigation during little more than seven months of the year. Of the total wheat shipments the lakes got 79.7 per cent. and of corn 60.2 per cent. The following table, prepared from the annual report of Secretary George F. Stone of the Chicago board of trade, just issued, gives the shipments, lake and rail, in detail:

	Lake.	Rail.	Total.	Per cent. by lake.
Wheat, bushels.....	31,102,888	7,887,281	38,990,169	79.7
Corn, " " "	40,069,786	6,508,514	66,578,300	60.2
Oats, " " "	17,832,975	50,938,639	68,771,614	26.1
Rye, " " "	5,594,151	1,978,840	7,572,991	73.8
Barley, " " "	1,671,500	6,186,608	7,858,108	21.2
Totals	96,271,300	73,499,882	189,771,182	50.5

The flour movement from Chicago during the year aggregated 4,048,129 barrels, of which 1,640,738 barrels were shipped by lake.

Canadian Grain Business.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont., June 9.—The Kingston and Montreal Forwarding Company, which does business at Portsmouth, about a mile from the city, has sent forward over 1,250,000 bushels of grain already this season. This all reached Montreal except some 170,000 bushels which were stored at Ogdensburg. Of course, the company will lose considerable by this storage, because the government will not allow the rebate on canal tolls on that quantity.

A deputation of citizens from Prescott were in Montreal this week endeavoring to secure aid from the steamship companies in erecting a large grain elevator at the former place. Prescott is immediately opposite Ogdensburg. Large grain laden vessels would hardly run the risk of navigating the Canadian St. Lawrence farther down than Kingston without the aid of pilots. There is no doubt, however, that the place that supplies the elevator will get the transhipping business.

Capt. Thomas Taylor, inspector for the underwriters, has returned from a tour of inspection in this district. He states that very few new vessels made their appearance, but that the old ones are in a good state of repair.

Before the propeller Glengarry and consorts Gaskin and Glenora, owned by the Montreal Transportation Company, started out this spring one of the hands broke a mirror, and bad luck was predicted by a prophetic sailor. The boats were missing twice on Lake Superior, and were about thirty-two days on one trip. After the return the propeller took fire in the middle of the night and \$10,000 damage was done to boat and cargo. The cook, Mrs. Lamb of St. Catherines, went back to the cabin for some jewelry, became bewildered and finally sprang into the water and was drowned. Her limbs were badly burned. A. Barton, the engineer, had his face and hands scorched, and in order to escape had to take to the water. The Glengarry had 21,000 bushels on board, nearly all of which is more or less damaged. The Glenora's cargo was also nearly all damaged, so that the trip was a most disastrous one, not to speak of the delay during the busiest part of the season.

Capt. James Riley has returned from Europe, where he succeeded in bringing about the amalgamation of most of the leading German insurance companies, with the object of doing marine business in Canada and giving present risk holders keen competition. Two syndicates have been formed under the name of the Manheim Insurance Company and the European Insurance Association. The latter has a subscribed capital of \$4,500,000. The policies are to be made payable in London, Eng. At present American companies hold many Canadian marine risks.

On Thursday last the schooner British Queen, while on her way to Toronto with stone, caught fire and was beached near Trenton. The crew reached an adjacent island safely and in a short time the vessel was burned to the water's edge. The loss is covered by insurance in the Aetna. Capt. Smith, her owner, says he has no idea how the fire originated.

Hon. George A. Kirkpatrick, who had charge of the reciprocity in wrecking bill in the house of commons has resigned his membership, having been appointed lieutenant governor of Ontario. Mr. Hiram Calvin, the great timber shipper, has been nominated to succeed him in parliament, with good prospects of being elected. Mr. Calvin is a strong advocate of such legislation. He is also in favor of no discrimination in canal tolls, taking the ground that all grain should pay tolls as well as timber, but that if there is a rebate in one case it should be in the other also.

For Sea, River and Canal Service.

An interesting report just made to the state department by Consul Williams at Rouen, gives some particulars concerning a remarkable steamboat, which makes periodical trips past Rouen. This steamer was built especially to ply between Nantes and Paris, thus taking in its course sea, river and canal. The system by which the Louvre, as it is called, is propelled is a modification of that of Thornycroft, which has been employed for many years upon torpedo boats of the Brazilian government and police boats on the Nile. The distinguishing feature is the arrangement of the screw in the center of the boat, instead of ordinary location in the stern. This invention is due to M. Oriollo, the shipbuilder of St. Nazaire, and Mr. Williams says that it has already been applied to boats navigating the Loire and canals, but this is the first attempt to utilize it upon a sea-going vessel. The Louvre is a steamer of 500 tons burden, with two screws arranged in the center, in front of the engine, in two tunnels parallel to the axis—one starboard and the other larboard. The tips of the blades of the propellers do not project below the keel of the ship.

The tunnels are always filled with solid water, in which the screws work. This is not the case in the ordinary arrangement of the screws, which, from the pitching of the ships, lifts the propeller, thus working in broken water. In the ordinary arrangement of a propeller placed in the stern a greater draft of water is required, and it was noticed on the arrival and departure of this vessel that the disturbance of the water was materially lessened by this arrangement of the screws. Another advantage is in the facility with which the screw can be examined in case of any accident. Wells connect the tunnels with the deck. When one enters the tube, it is hermetically closed, and it is only necessary to introduce compressed air to drive the water out below the arbor and work with all ease. This steamer is 54 meters in length and 8.5 meters in breadth, and draws 2.8 meters (about 9 feet 2 inches) of water. The motive power consists of two triple expansion engines of 400 horse power each. On this first trip the Louvre made 10 knots an hour upon the rivers and 9 at sea. In the hold of the ship the tunnels which cover the screws are visible. The hold is large and is surrounded on three sides by a false deck, affording storage for parcels as well as strengthening the vessel. The funnels and masts can be lowered very expeditiously as the vessel passes beneath the thirty bridges on the way to Paris.

In the United States arsenals is used the best and most original process known to the world for cleaning brass. It is a solution of nitric and sulphuric acids; a measure of the former to half a measure of the latter, placed in an earthen jar. The brass is immersed in the acid and then speedily dipped into a pail of water and finally rubbed with dry saw dust. The brass becomes as brilliant as if polished by a lathe. Should it be greasy a hot solution of soda or potash is prepared and the brass dipped into it. This enables the acid to act by removing the grease.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St. Cleveland, O. Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company.....	\$100 00	\$.....	\$ 75 00
Champion Iron Company.....	25 00	.....	60 00
Chandler Iron Company.....	25 00	42 00	45 00
Jackson Iron Company.....	25 00	.....	100 00
Lake Superior Iron Company.....	25 00	44 00	47 00
Minnesota Iron Company.....	100 00	.....	75 00
Pittsburgh & Lake Angeline Iron Co.....	25 00	.....	150 00
Republic Iron Company.....	25 00	.....	19 00
Ashland	25 00	.....	.....
Section Thirty-three.....	25 00	.....	7 50
Brotherton.....	25 00	.....	2 50
Iron Belt.....	25 00	.....	.....

Following its annual meeting a short time ago, the Chandler company made a statement, which is understood to be of a very favorable nature, although it has not been made public. The annual meeting of the Section Thirty-three company will be held this week. This company is understood to have about \$6 a share in its treasury and there is some talk of another dividend for the stockholders. Aurora has declared a dividend of \$1 a share payable on the 15th inst. There is some improvement in the trade in mining shares, although buyers and sellers are still apart on most values, notwithstanding the low range of prices. A few sales of Republic, for a long time the stock of most favor in the market, have been made as low as \$18.50.

Duluth reports say that the Ohio Mining Company, the concern in which Ex-Governor Campbell and other politicians are interested, has closed a contract for mining on its properties at a royalty of 65 cents a ton. The name of the second party to the contract is not given, so that some doubt attaches to the report. William Schlesinger, brother of Ferdinand, denies the statement that the new owners of the Chapin are negotiating for mining rights on the Cincinnati and other Mesaba properties. Kimberly's managers at the Biwabik still claim that they will conduct open pit mining with the steam shovel. A shovel now at Mesaba station will be used for stripping the surface and it is claimed that others of larger capacity will be secured later for mining purposes.

Ferdinand Schlesinger sold the Chapin mine under a close money market and under financial disadvantages and regained control under an easy situation in money matters. He says, however, that confidence in an early improvement of the iron business had most to do with the late purchase. There are some people in the iron ore business who agree with Mr. Schlesinger that July or August must show a marked change in the iron trade generally. The tendency toward reduced profits in mining, the change from iron to steel and concentration of large interests in the business are all features that are looked upon favorably by big mining companies.

Shipments of iron ore from Two Harbors up to Wednesday, May 25, aggregated 143,814 gross tons, of which 77,774 tons was of the Chandler and 66,040 tons of the Minnesota grades. On the same date shipments from Ashland aggregated 263,628 tons, divided as follows: Ashland 33,989 tons, Aurora 54,758, Colby No. 2 9,230, Tilden 28,164, Iron Belt 4,428, Montreal, North vein 4,041, Palms 9,424, Brotherton 8,113, Carey 4,393, East Norrie 21,367, Newport 8,852, Norrie 53,605, Pabst 11,621, Sunday Lake 11,338.

The first real shipments from the Iron Belt mine, Gogebic range, since the close of the season of 1890 were made on Monday of last week. The force has been increased by the addition of about 300 men. The mine has about 100,000 tons in stock and is in excellent shape for producing ore.

Great Engine Power.

The chief motive power for the machinery at the World's Columbian Exposition will be supplied by a large engine, to be furnished free to the exposition by the E. P. Allis Company of Milwaukee. The engine will be furnished as a part of the company's exhibit, upon a special contract providing that it shall be used for the motive power, and that no other engine of equal size shall be exhibited. It will be an engine of the quadruple expansion type, and will be of between 3,000 and 4,000 horse

power. Compared with this engine the big Corliss that was exhibited at the Centennial Exposition is almost a dwarf. In 1876 the Corliss was considered one of the wonders of the exposition, but its builder rated it at only 1,400 horse power, or less than half of the one being built by the Allis company. The Allis exhibit represents an outlay of \$175,000.

Carelessness.

The REVIEW receives occasional communications from masters complaining of carelessness of other masters in narrow channels, in docks or in rivers. As these complaints must be prejudiced they are not usually published but the one below is used as an example, showing that ungentlemanly conduct of the captain on board of a vessel is worse than such conduct ashore, for the whole vessel displays his actions in their worst light. The complainant, an old lake captain, states that while standing on the dock at the Sault canal, May 28, there were a number of vessels waiting their turn to lock through, several being aground, and three or four awaiting examination of draft by canal authorities. Most of them had lines out on the dock. At this time a new steamer, bound up and loaded, left the lock and was soon going full speed. The captain paid no attention to the other vessels, and as a result those that were not aground broke their lines. Captains on the boats farther up saw the runaway and put out extra lines, only to have them broken also. Appeals and swear words had no effect on the new captain of this new boat. The writer refers to captains of the Fayette Brown, Colgate Hoyt and consorts and superintendent of the locks for verification of the statement, and asks if the owners of the new steamer should not pay for the broken lines.

With large and powerful steamers captains get into tight places sometimes and do things that seem necessary to clear their boats which they afterward regret as much as those who suffer for it. The E. M. B. A. fellowship and rules on this subject have done more good than the passage of some law making careless navigation criminal. It is to be hoped that its influence will be extended to more masters.

Heavy Canal Traffic During the Month of May.

Freight passing through the St. Mary's Falls canal during the month of May aggregated 1,535,068 net tons, of which 1,078,796 tons was eastbound and 456,272 tons westbound. The traffic was divided as follows:

	Eastbound.	Westbound.
Coal.....	.....	401,729 tons.
Flour.....	687,685 bbls.	80 bbls.
Grain.....	.....	5,623 bu.
Corn.....	100,027 bu.	.....
Wheat.....	1,405,847 bu.	.....
Building stone.....	3,834 tons.	.....
Copper.....	8,835 tons.	.....
Manufactured iron.....	.....	5,279 tons.
Iron, ore.....	503,341 tons.	.....
Iron, pig.....	4,777 tons.	.....
Salt.....	.....	50,010 bbls.
Lumber.....	.....	.....
Silver, ore.....	350 tons.	.....
Unclassified freight.....	19,484 tons.	39,636 tons.
Passengers.....	561	921

The movement of wheat and coal to and from the head of the lakes, as shown in the above statement, is probably much heavier than was expected.

Grain at Chicago and Duluth.

Stocks of grain at Chicago and Duluth on Monday, June 6, were as follows:

	Chicago.		Duluth.
	Wheat, bu.	Corn, bu.	All wheat, bu.
In store.....	6,442,169	1,614,733	4,283,937
Decrease last week.....	101,691	.....	687,063
Increase last week.....	.....	460,252	.....
Excess over same time last year...3,438,162	.....	.....	1,642,900
Decrease compared with same time last year.....	392,218	.....	.....

In addition to the above there is 1,154,346 bushels of oats, 176,530 bushels of rye and 16,951 bushels of barley in store in Chicago.

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MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

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SUBSCRIPTION—\$2.00 per year in advance. Convenient binders sent, post paid, 75 cents. Advertising rates on application.

The books of the United States treasury department contain the names of 3,600 vessels, measuring 1,154,870.38 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The number of vessels of 1,000 to 2,500 tons on the lakes on June 30, 1891, was 310 and their aggregate gross tonnage 512,787.58; in all other parts of the country the number of this class of vessels was, on the same date, 213 and their gross tonnage 319,750.84. The classification of the entire lake fleet is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,592	756,751.53
Sailing vessels	1,243	325,131.06
Canal boats	703	72,515.42
Barges	62	20,472.37
Total.....	3,600	1,154,870.38

Tonnage built on the lakes during the past five years, according to the report of the United States commissioner of navigation, is as follows:

No. of boats.	Net Tonnage.
1887.....	152
1888.....	222
1889.....	225
1890.....	218
1891.....	204
Total.....	1,021

485,042.94

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014.

Entered at Cleveland Post Office as Second-class Mail Matter.

A COMMITTEE of the Lake Carriers' Association was appointed a short time ago to look into the practice governing the locking of vessels through the St. Mary's Falls canal, and to otherwise pursue an investigation bearing upon the losses suffered by vessel owners on account of the low draft of water at that time permitted in the canal. The committee was empowered to call upon Gen. Poe at Detroit and also extend its inquiry by a visit to the canal. Immediately upon this action being taken by the association, the canal draft began to increase materially—from natural causes, it is only fair to state, as the increase was marked in other channels—and the committee has not as yet taken up the duties for which it was appointed. Some comment has been made, however, on the failure of the committee to act, and although the REVIEW is not empowered to make any authorized statement in the matter, it may not be amiss, now that the sincerity of the vessel owners has been questioned, to refer to some matters leading up to the subject. The committee may still go on with the inquiry, for all that is known of its intentions, as there was no special time set for the work and no immediate report demanded. Any intimation, however, that this action on the part of the association was not warranted will not be borne out by the facts. To begin with, the only chance of fair profit so far shown to the vessel interests this season has been in the movement of wheat from the head of Lake Superior and in the season contracts on iron ore from Ashland and Two Harbors. It is not difficult for anyone acquainted with the lake business to understand the great importance of even a few inches of water in the canal draft to these branches of the Lake Superior trade, when governed by favorable rates in spurts in the case of grain and by contract rates on the ore that can not increase as a result of a limited canal capacity. Aggravated to the extreme by a low stage of water, owners found themselves confronted with annoying reports from masters of most exacting demands from Mr. Lynch when in

charge of the canal—steamers compelled to lighter and blow off boilers when only a slight fraction more than the required draft resulted in costly delays. How often it happens that a vessel loading on a swell or movable seaway is put into the water a trifle deeper than is intended, or in the case of a steamer bound down Lake Superior and falling in with a favorable northwest wind it is not uncommon to find her draft on reaching the canal a little deeper than was expected, on account of a saving in fuel. It was these and other aspects of the question that the vessel owners intended to have talked over with Gen. Poe. There was no lack of confidence in his efforts to do all that is reasonable for the shipping interests while guarding the important works under his charge, but there was a desire to learn whether the direct management of the canal was in many ways acting against these interests.

IN the house on Monday Chairman Blanchard of the river and harbor committee secured the appointment of a committee of conference on the river and harbor bill. Messrs Blanchaard, Catchings and Henderson are house conferees. If the conference committee will remove from the bill the appropriation for a survey for a ship canal from Lake Erie to the Ohio river and make the 20-foot lake channel appropriation \$500,000, the original house figure, the lake shipping interest will feel that its work is well done.

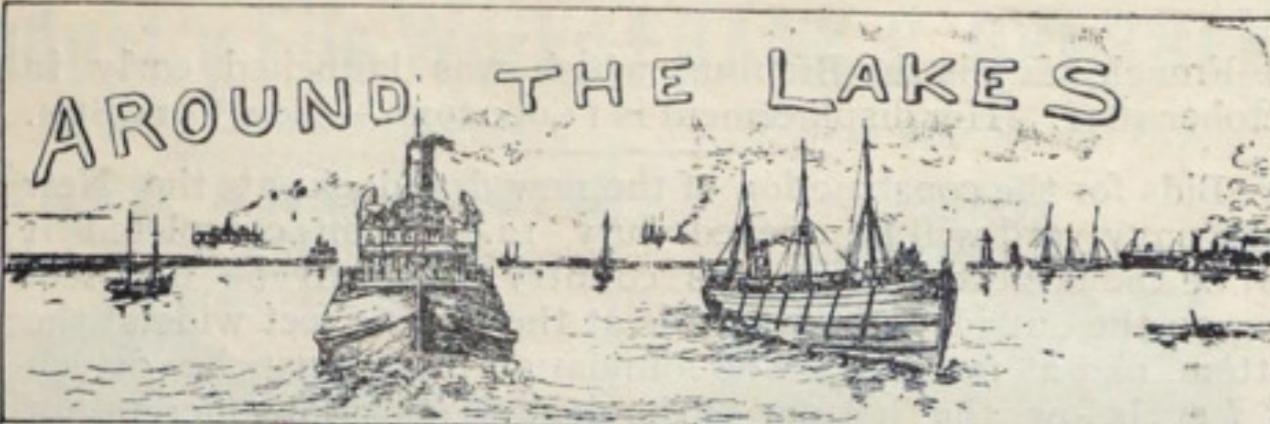
SCARCELY a month passes of late without one or more of the leading magazines giving space to articles pertaining to lake commerce. In a series of papers on "The Future World's Highway," published in the Engineering magazine, T. Graham Gribble, C. E., dwells at great length in the June number of that publication on the subject of an outlet from the lakes to the seaboard by way of the proposed Ontario ship-railway and the St. Lawrence canals.

CANADA seems to be going into the cruiser business on a big scale if the boats as it is claimed, are to be used only for the protection of fisheries and revenues. Cruiser No. 2, a duplicate of the Constance, is now nearing completion at the yard of the Polson Iron Works, Owen Sound, and the ship building company has begun work on the engines for a third boat at its engine building plant in Toronto.

Navigation of the Sault River by Night.

Now that preparations have been made for the maintenance of range lights in the St. Mary's river, the question of the practicability of navigating the river by night has been taken up and it is intimated in some quarters that the underwriters have been discussing the advisability of stepping in and refusing to adjust losses occurring to vessels in the river while attempting to run the new lights. The claim is made that it would be exceedingly dangerous to run vessels in the river by night when the present crowded condition of its narrow channels by day is taken into consideration. Collisions are predicted, and it must be admitted that many captains are decidedly adverse to the new order of things. Some of them say that two sets of ranges are necessary if navigation is to be carried on at all in the river at night, and in support of their claims they point to present dangers at the Lime-Kiln crossing and other similar places. Many cases will occur, they say, where the situation will be alike to that of two locomotives meeting on a single track. The captain bound in one direction and holding the ranges in a channel known to be dangerously narrow even in daylight will be adverse to giving any space to a vessel coming from the opposite direction. The subject is certainly worthy of most careful consideration from both owners and masters if a benefit instead of disaster is to be derived from the ranges for either day or night service.

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Capt. George E. Mapes, owner of the schooner Smith & Post, died at his home Saturday. He had followed the lakes for many years.

The Hallenbeck-Hollister steel steamer building by F. W. Wheeler & Co. of West Bay City will be named W. H. Gilbert for Mr. Hallenbeck's son-in-law.

On her first trip from Escanaba the wooden steamer Iroquois, built and owned by Curtis & Brainard of Toledo carried 2,250 gross tons of ore on 15½ feet draft.

Aug. 1 is now set as the date for the opening of the American Steel Barge Company's big dry dock at West Superior. A lack of oak timber is given as the cause for delay.

Boutelle & Smith of Bay City are putting a raft together in the Cheboygan harbor which will contain about 9,000,000 feet of lumber. It is the largest one ever constructed on the lakes.

Citizens of Kincardine, Ont., have petitioned the Canadian government to cause a new survey to be made of the easterly shore of Lake Huron and the southerly shore of Manitoulin island.

L. S. Sullivan of Toledo has sold the tug Syracuse to Millinix Bros. for \$1,700, and Barry's independent tug line of Chicago has bought the tug D. T. Hall from Pardew, Cook & Co. for \$10,000.

Escanaba has agreed to contribute eighty acres of land to the Delta Steel and Iron Company, capitalized at \$2,000,000, and it is expected that the town will soon have a plant employing 1,000 or more hands.

Supervising Inspector Westcott of Detroit says a searching investigation will be made regarding the collision between the steamer City of Mackinaw and the tug Washburn, through which John T. Hurley and Engineer Robinson of Detroit were drowned.

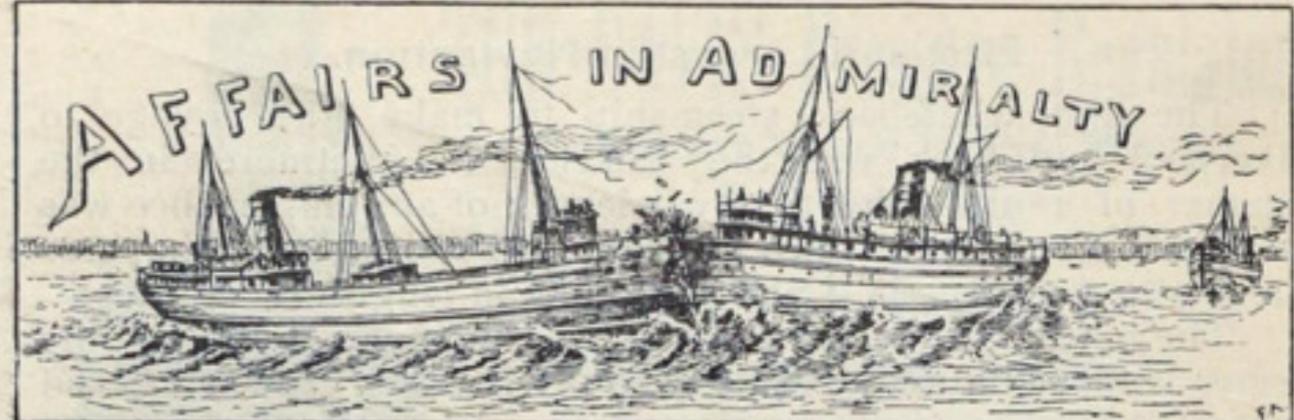
Agents of the underwriters interested in the steamer Progress, sunk at Mamajuda island, Detroit river, have made arrangements for the maintenance of a bright light on the wreck. The light will be shown from the after end of the boat and near the water's edge. Vessels must pass to the eastward of the light.

A notice from the office of general freight agent of the Detroit and Cleveland Steam Navigation Company at Detroit, says that Mr. Harry R. Rogers, freight agent at Cleveland, having resigned to accept a position with another company, correspondence should in the future be addressed to T. F. Newman, general agent.

Owners of the steamer Pilgrim, satisfied that the recent sinking of the steamer Kalamazoo in Lake Michigan was the result of a blunder on their craft, have arranged a settlement with the owners of the Kalamazoo, who pay \$6,000 and take possession of the Pilgrim. The Pilgrim has a valuation of about \$19,000, while the Kalamazoo was put down in Inland Lloyds as worth \$12,000.

Capt. Webb of Cassopolis, Mich., is having built at Grand Haven a steamer 150 feet long, with 20 feet beam and of light draft, about 6 feet. She will be equipped with a powerful engine and is expected to show a speed of 18 miles an hour. Passenger and freight business between Traverse City, Charlevoix, Petoskey and other Lake Michigan points is the service to which she will be applied.

A wrecking expedition working under the direction of Henry McMoran of Port Huron succeeded Sunday, in releasing the schooner J. D. Sawyer from the beach at Avon point, Lake Erie, above Cleveland. The Sawyer, which went ashore last fall, was owned by Capt. Murphy of Cleveland. He abandoned her and she was purchased from the underwriters by C. W. Elphicke & Co. of Chicago. She was taken to Lorain, but repairs will probably be made at Port Huron.



Justice Brown, formerly of the United States district court at Detroit, is this week hearing in the circuit court of appeals at Cincinnati some of the first cases from the lakes to come before this new court of final jurisdiction in admiralty matters. Among the cases to be heard is that of the owners of the schooner Mitchell against the steamer J. H. Devereaux, resulting from a collision near the Sault, the Mitchell being in the tow of the steamer Folsom at the time of the accident. Four cases of the Pittsburgh and Lake Angeline and Lumbermen's mining companies against J. C. Gilchrist of Cleveland are also set for hearing. These actions are based upon a claim of failure to carry out an ore contract, and the mining companies have been successful in the lower courts, as shown by the decision of Circuit Judge Jackson in one of the four cases printed below. The cases are of a joint nature and will, of course, depend upon a single decision. Mr. Sherman of Sherman, Hoyt & Dustin, Cleveland, represents the mining companies and Mr. Goulder of Goulder & Pinney, also of Cleveland, is acting for Mr. Gilchrist.

In the May 24 issue of the Federal Reporter the decision of Circuit Judge Jackson affirming the ruling of the United States district court in the case of the Lumbermen's Mining Company against J. C. Gilchrist and others is given in full. The Lumbermen's Mining Company is represented in Cleveland by J. H. Outhwaite & Co., and the suit was to recover damages for breach of charter. A summary of the decision prepared by the court says: "Unqualified charter parties are to be construed liberally as mercantile contracts, and a party who has by charter charged himself with an obligation must make it good, unless prevented by the act of God, the law, or the other party to the charter. Respondents, who are ship owners, entered into an absolute agreement with the libelant, by charter, that they would during a season of lake navigation carry eight cargoes of libelant's iron ore from one port to another in a specified vessel to be towed by another specified vessel. Two of the eight trips were not performed and libelant employed other vessels at an advanced freight, and brought this suit to recover the difference of freight between the charter rate and the rate they were obliged to pay. The ship owners averred that after it appeared that the designated vessel could not make the eight trips, they had offered to supply other towage, which offer libelant refused; also, that during the existence of the charter, one of the specified vessels was at times detained by other business. The ship owners, however, entered into, by their charter, an unqualified undertaking possible to be performed and must make it good, unless performance was rendered impossible by the act of God, the law or by the libelant, and hence the libelant is entitled to recover."

Elegant Electric Light Equipment.

The Fisher Electric Company of Detroit has closed a contract with Mr. W. J. White of Cleveland to equip his steam yacht Say When with an incandescent lighting plant. The driving engine will consist of a vertical, twin cylinder automatic machine connected directly to the dynamo. The engine is designed to safely stand steam pressure at 250 pounds. Special fixtures are being manufactured for the mahogany finished deck and main cabins. The boat will be equipped with automatic signal lights and it is very probable that a search light will also be applied. The Say When having a very clear deck, arrangements have been made for a system of wiring whereby it can be brilliantly illuminated at night by suspending about fifty incandescent lamps from the main deck. This system of wiring will be removable and can be placed in position and taken down in about fifteen minutes. The yacht will be divided into ten circuits, all the circuits being grouped on a mahogany switchboard controlled by double-pole switches of the "quick-break" class.

First and Largest in Navigation.

The first whaleback steamship to make the voyage to Liverpool and back was the Charles W. Wetmore, in the summer of 1891. The first whaleback of any importance was the yacht Livadia, designed by Admiral Popoff for the Emperor Alexander I. of Russia. She is 240 feet in length.

The biggest steam ferryboat is the Cincinnati, built by the Pennsylvania Railroad Company to ply between New York and Jersey City.

The largest steam engine in the world is on the new Italian cruiser Sardegna. A force of 25,000 horse power is developed.

The fastest ship in the United States navy, it is supposed, is the San Francisco, which on her trial on the Pacific coast maintained during a four hours' run a speed of 19.7 knots an hour. That was one-tenth of a knot in excess of the record of the Philadelphia. The maximum speed developed by the San Francisco was 20.06 knots an hour, which is equivalent to twenty-three land miles.

One of the fastest voyages from China to New York was made in the summer of 1890 by the steamship Glen Ogle of the Glen Line of Glasgow, which arrived from Amoy in forty-six days.

The greatest fleet of passenger vessels owned by any one company is that of the Peninsular and Oriental Steam Navigation Company. In the fleet there are seventy-two steamships of 199,270 tons and 189,000 horse power. The P. and O. steamships steamed 2,500,000 miles in 1890 without an accident.

The biggest fore-and-aft schooner in the latest government list is the Golden Age 1,763 tons, built at Abbots Bridge, O., in 1883. The Governor Ames, built at Waldoboro, Me., in 1889, registers 1,689 tons.

The largest floating elevator in the world was launched on Jan. 14, 1892, in Brooklyn. Its tower rises 74 feet above its deck.

Norman L. Munro's steam launch Norwood, with her record of a mile in 2:12 made on Nov. 7, 1891, may be considered "the fastest boat afloat."

The first steamboat to plow the Pacific along the coast of North America was the Hudson Bay Company's steamboat Beaver, which is to be exhibited at Chicago.

The first screw propeller on the great lakes was the Vandalia. Her machinery was built in Auburn prison, New York.

The first steam vessel across the Atlantic Ocean was the Savannah, which crossed from Savannah, Ga., to Liverpool in 1819. The first steam vessels to reach New York from Great Britain were the Sirius and the Great Western. The Sirius a ship of 700 tons, sailed from Cork April 4, 1838, and the Great Western, 1,340 tons, left Bristol three days later. They arrived on April 23, the Sirius in the morning and the Great Western in the afternoon.

The greatest steam vessel ever built, in size, was the Great Eastern, which was 692 feet in length and 83 feet in breadth. The Teutonic is 582 feet in length.

The largest turret ship in the world, perhaps the largest battle ship in existence, is the British battle ship Hood, which was launched at Chatham, on July 30, 1891. The Hood has a displacement of 14,150 tons. The largest American war ship is the harbor defense vessel Miantonomoh. The finest war ship in

the French navy is the Brennus, which was launched early in October 1891. Her displacement is 11,000 tons.—New York Sun.

Bids for the construction of the new dry dock at the New York navy yard will be opened July 12. When completed it will be the largest dock in this country. It will be 625 feet long on the outside, 154 feet wide at the top, 64 feet wide at the bottom, and 28 ft. deep. The foundation piers must be driven 45 feet below the bottom of the dock. A bed of concrete not less than 2 feet thick will cover the heads of the piles. The dock floor will be laid on stringers of yellow pine, secured to the foundation piles by bolts driven in the center of the piles. The dock will be closed with a steel floating gate or caisson. The caisson will be 108 feet in length at the top and 71 feet long at the bottom, 25 feet in breadth and 35 feet in height. The dock pumps will have a capacity to discharge 3,000 gallons of water per minute. It will take in the largest vessels in the navy, and will be an important addition to the yard.

UNITED STATES ENGINEER OFFICE, 34 West Congress street, Detroit, Mich., June 2, 1892. Sealed proposals in triplicate, for furnishing all plant materials and labor, and excavating in St. Mary's Falls Canal, Michigan, will be received at this office until 2 o'clock, p. m., July 2, 1892, and then publicly opened. Preference will be given to plant and materials of domestic production or manufacture, conditions of quality and price (import duties included) being equal. Attention is invited to acts of Congress, approved Feb. 26, 1885, and Feb. 23, 1887, vol. 23, page 332, and vol. 24, page 414, statutes at large. The government reserves the right to reject any or all proposals, or to waive any informalities in the bids received; also, to award the contract upon other considerations than the price. For further information apply at this office, or at the United States Engineer Office, Sault Ste. Marie, Mich. O. M. POE, Colonel, Corps of Engineers, Bvt. Brig. Gen., U. S. A.

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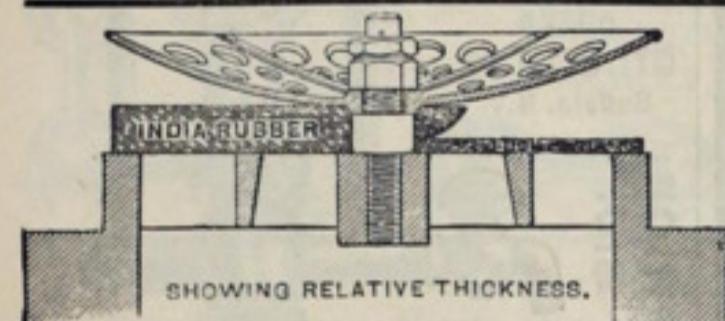
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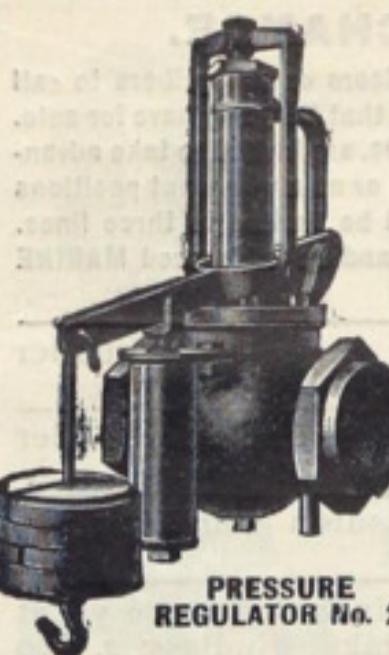
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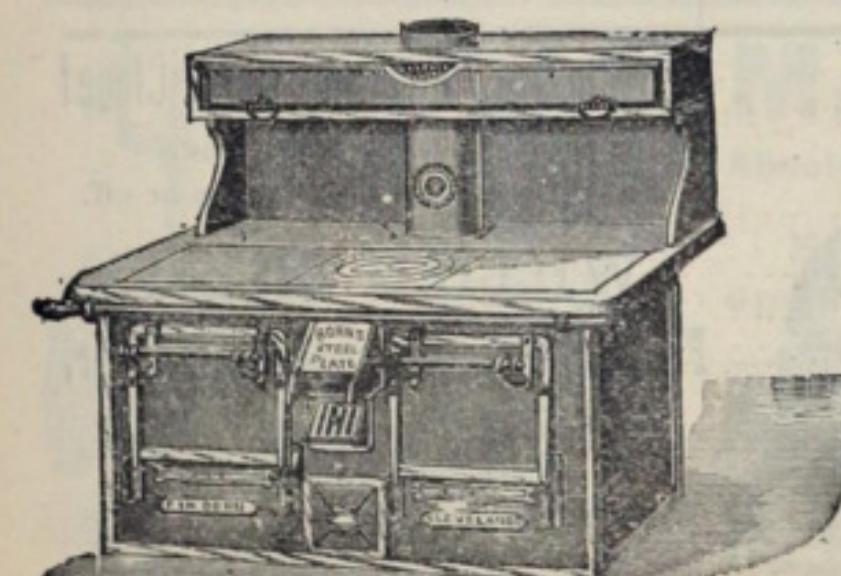
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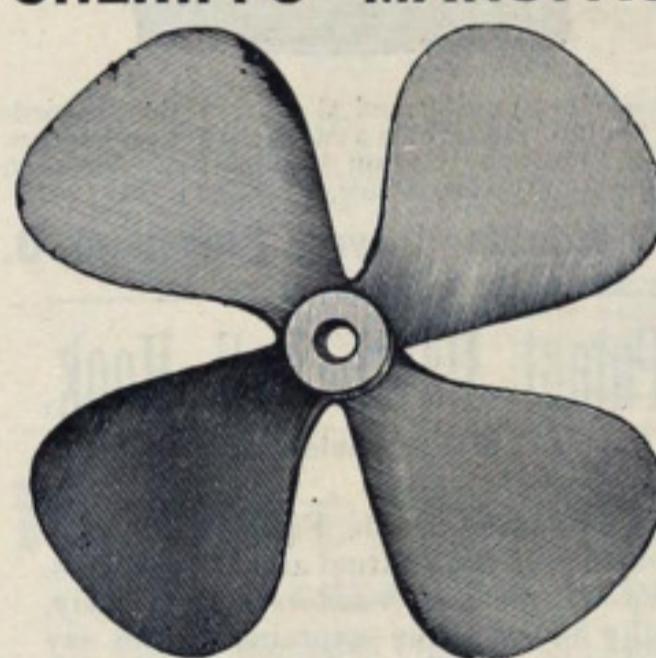
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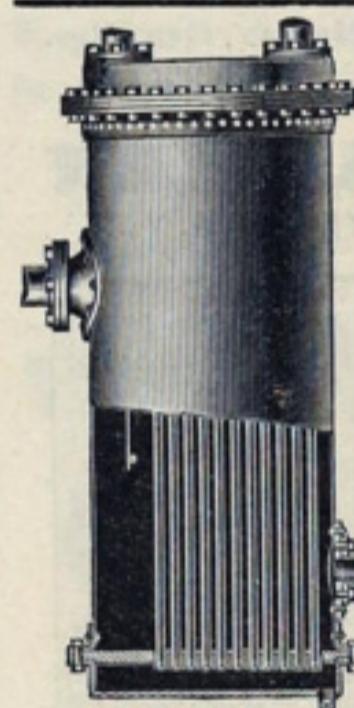
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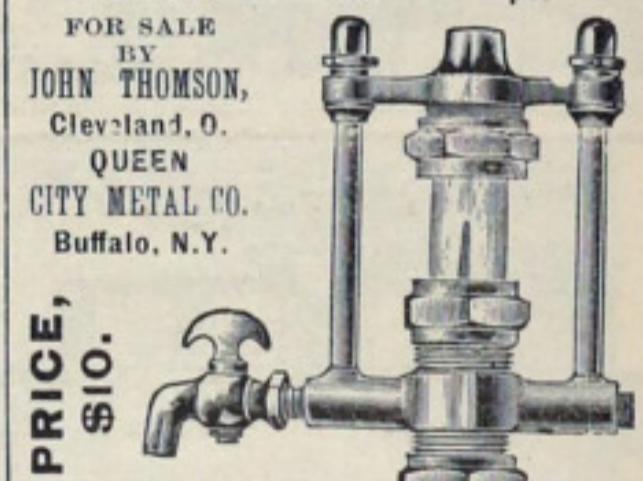
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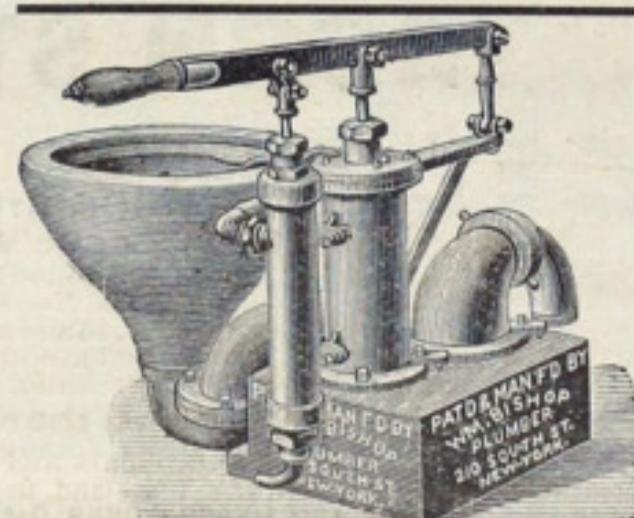
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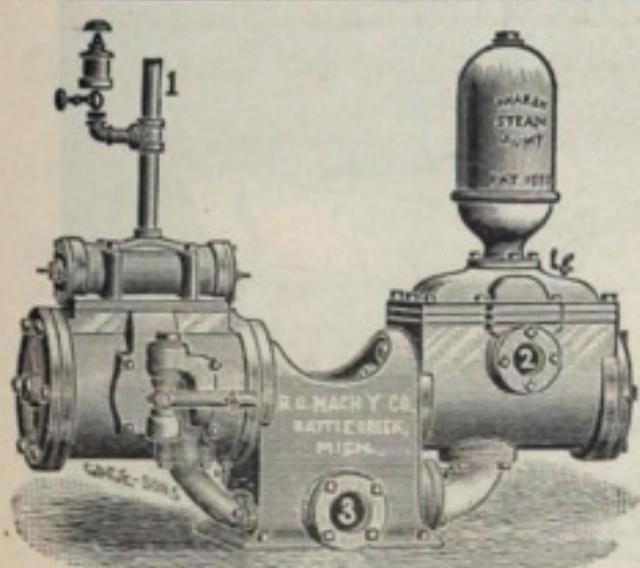
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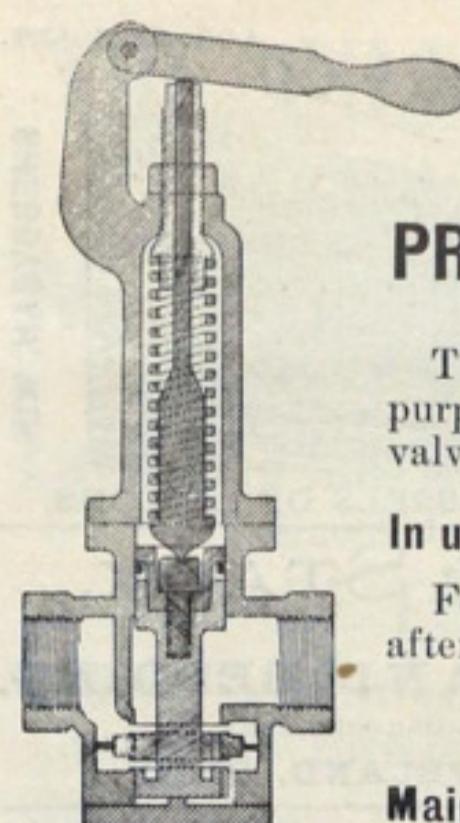
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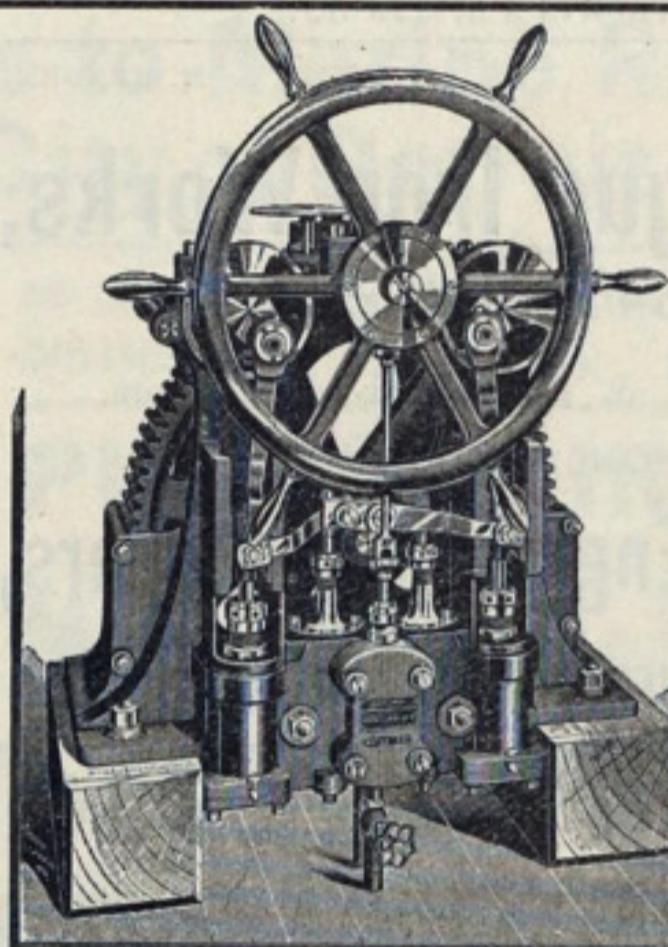
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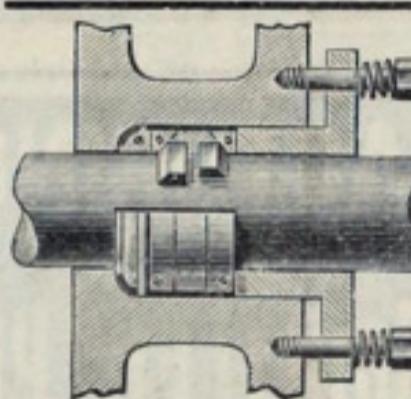
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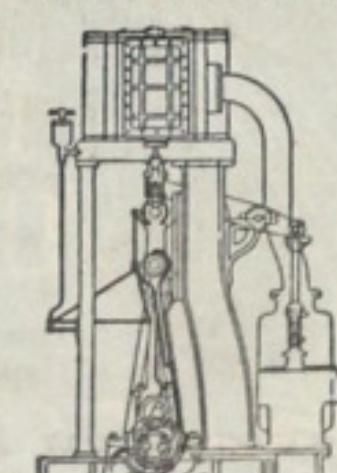
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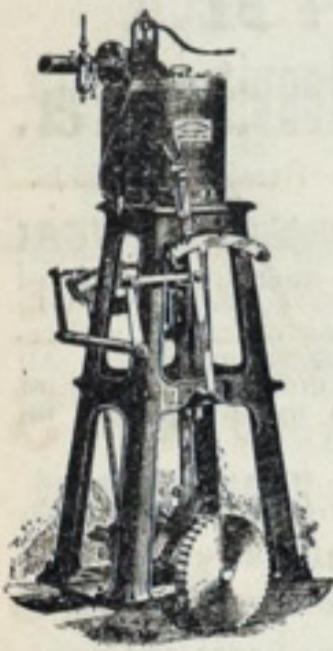


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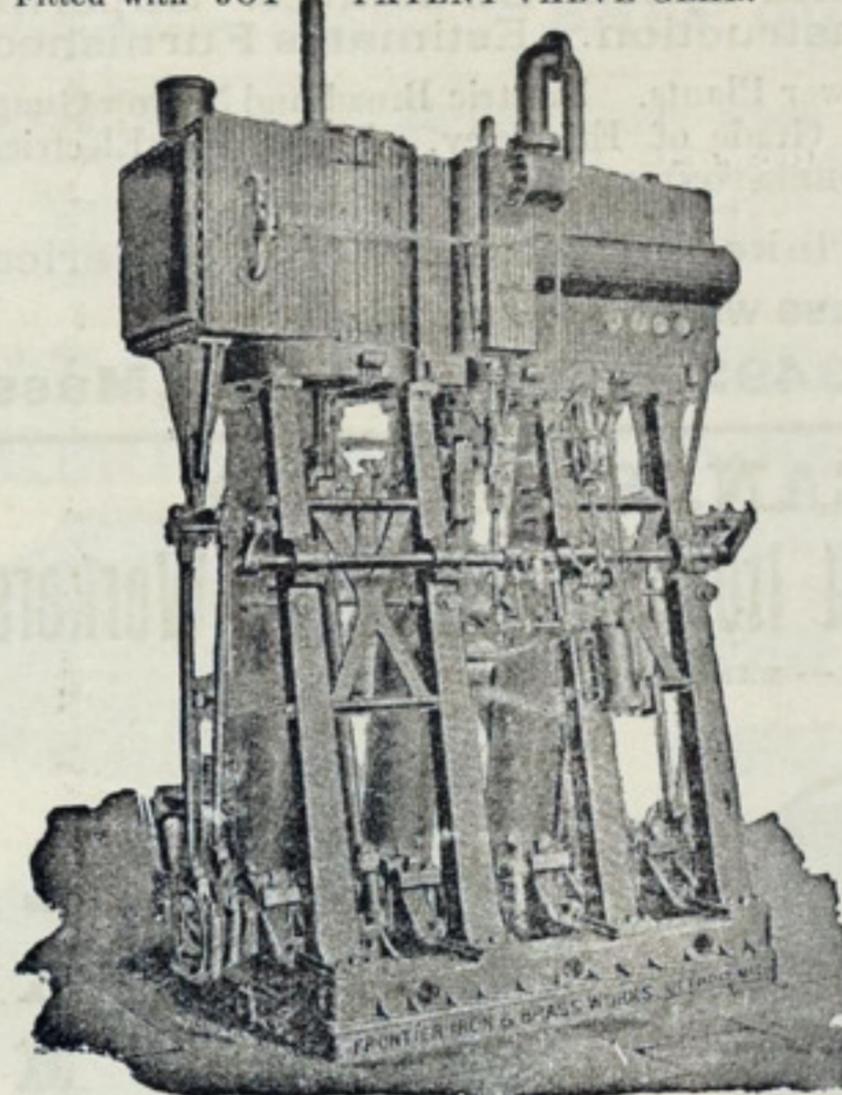
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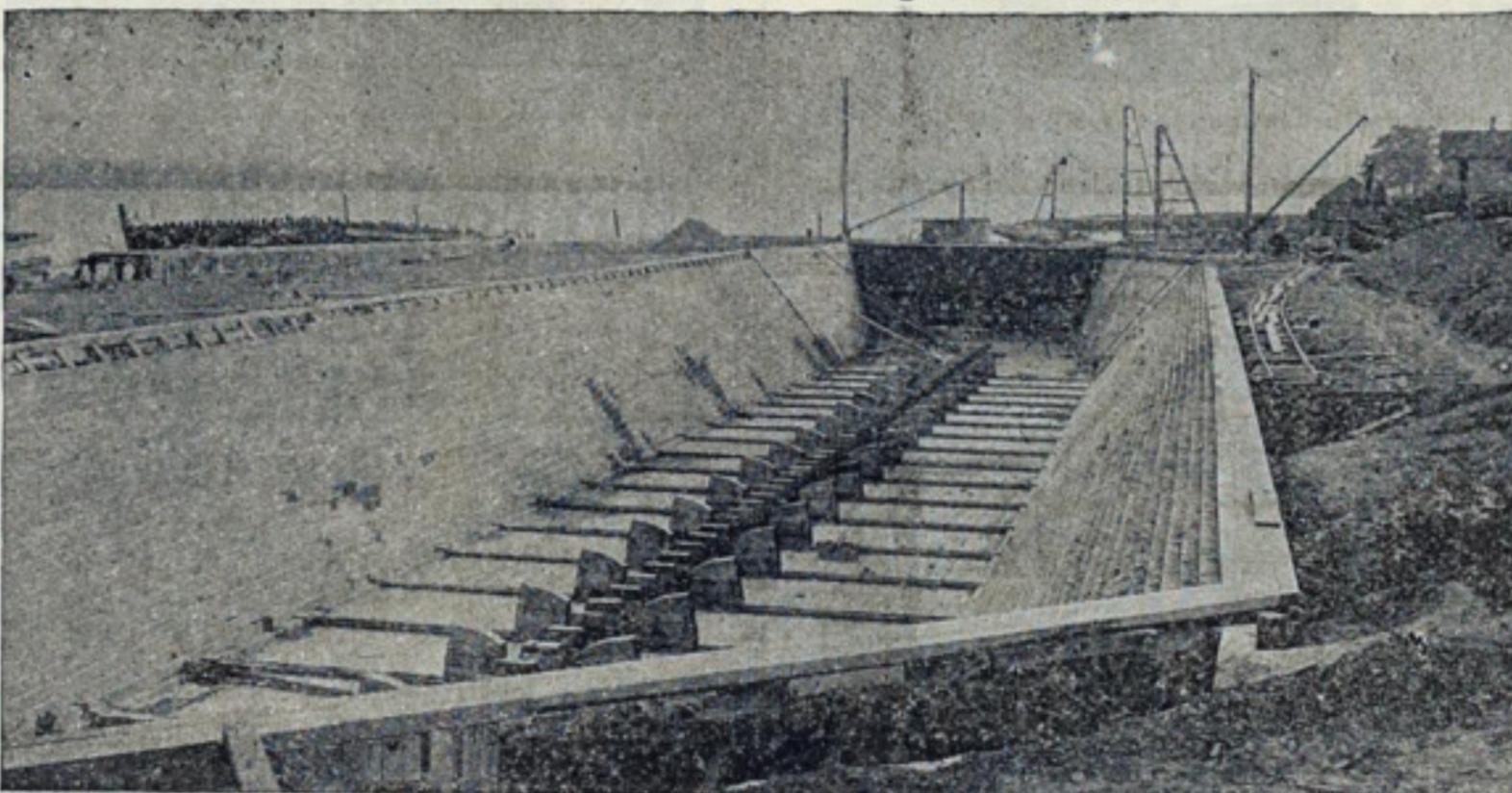
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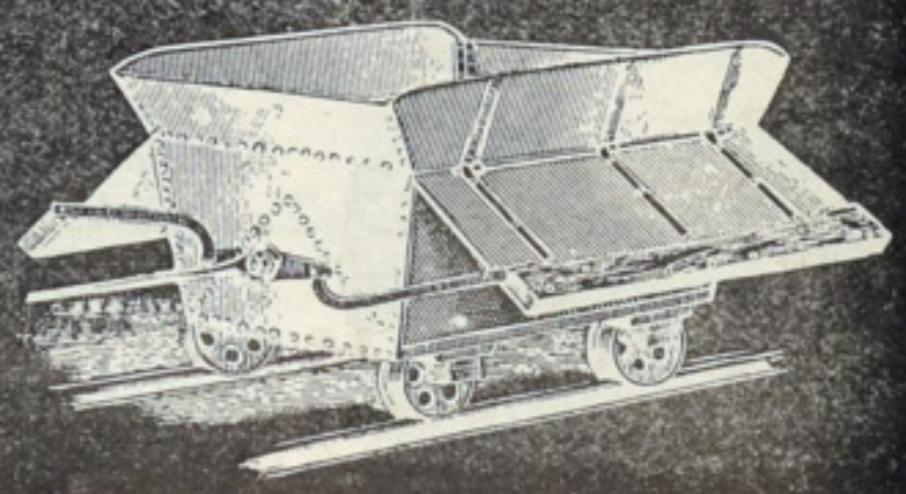
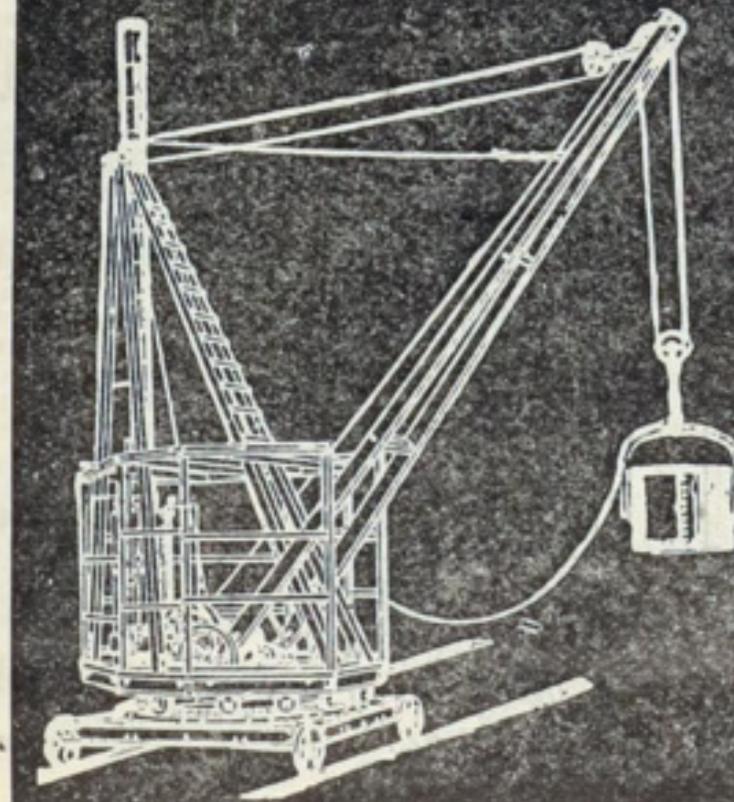
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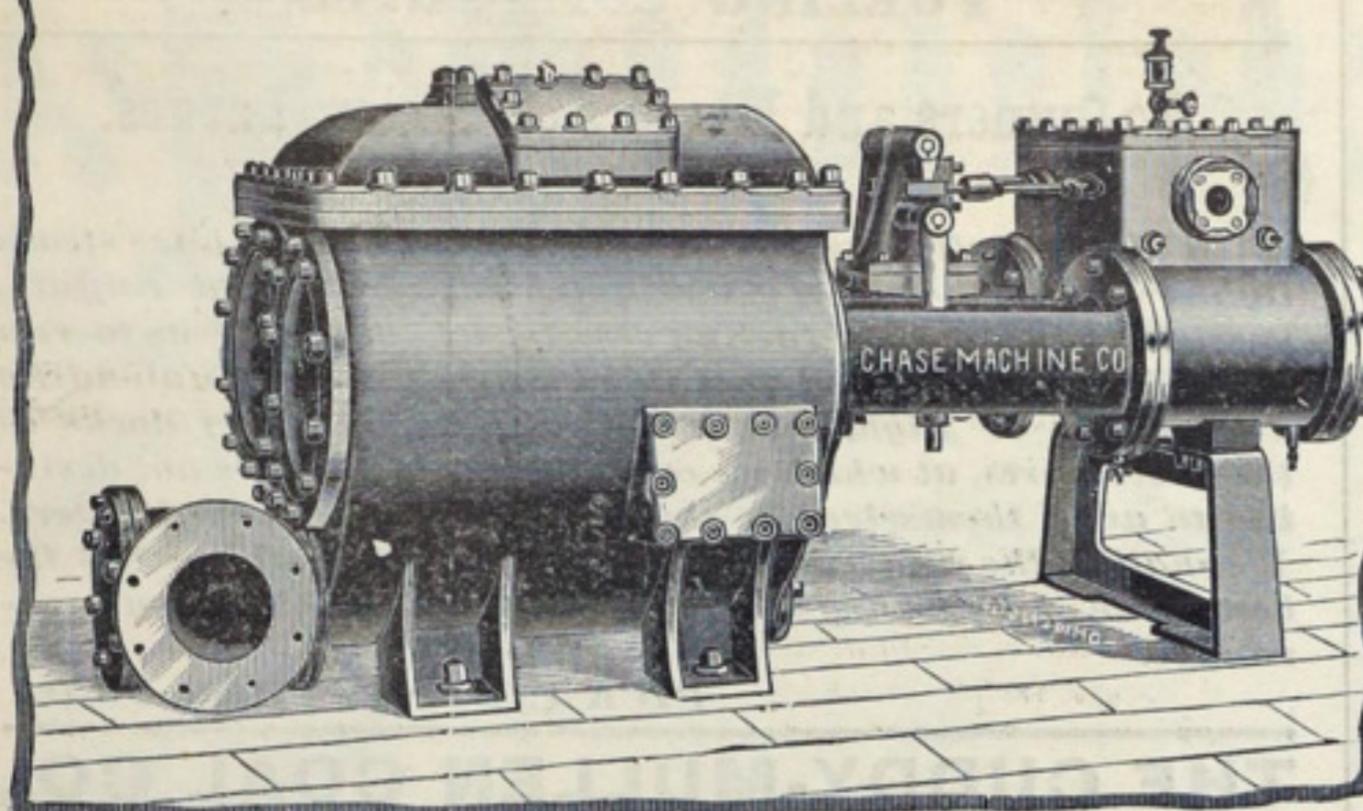
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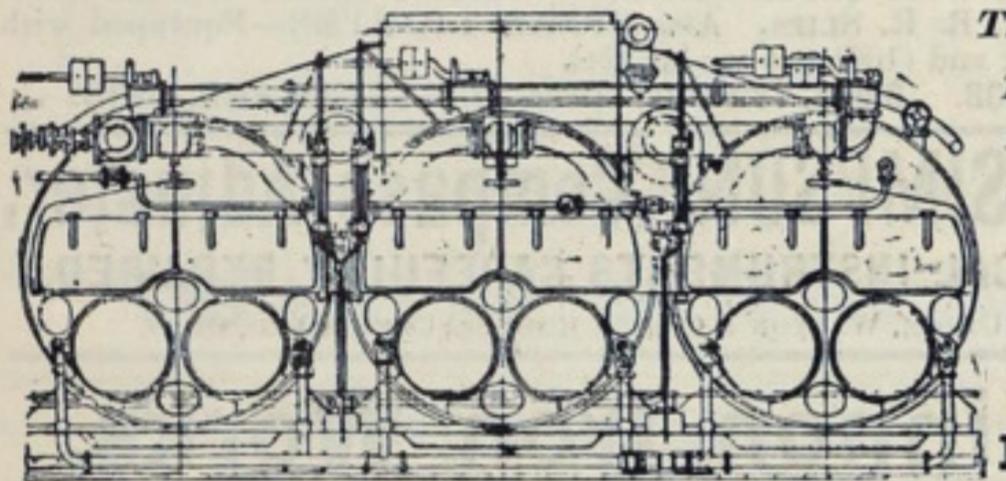


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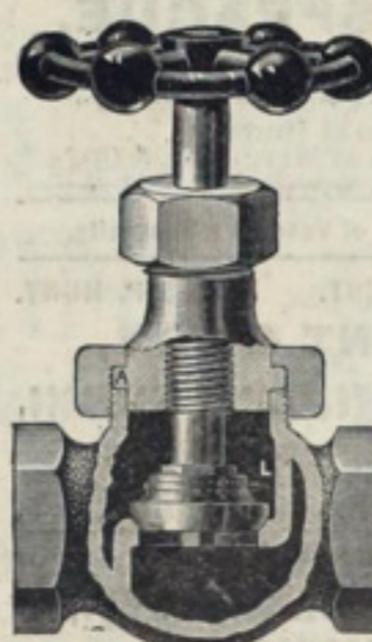
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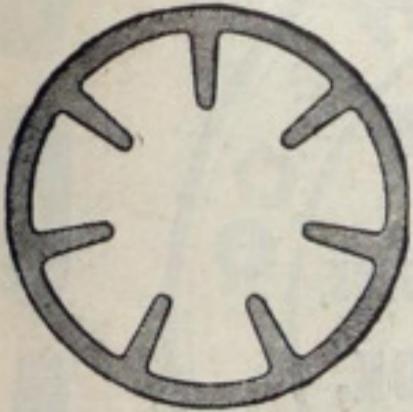


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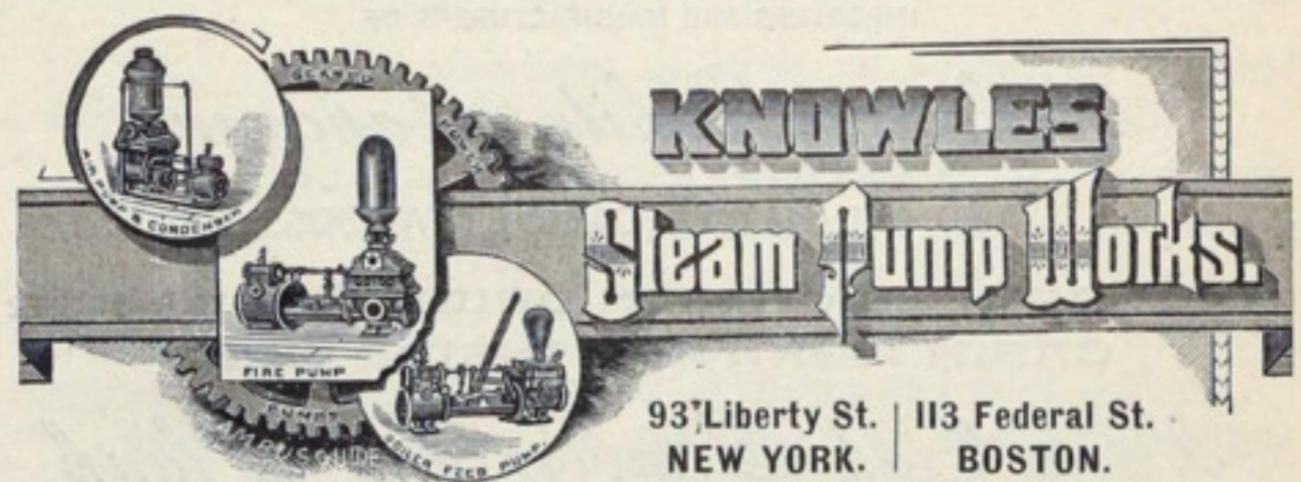
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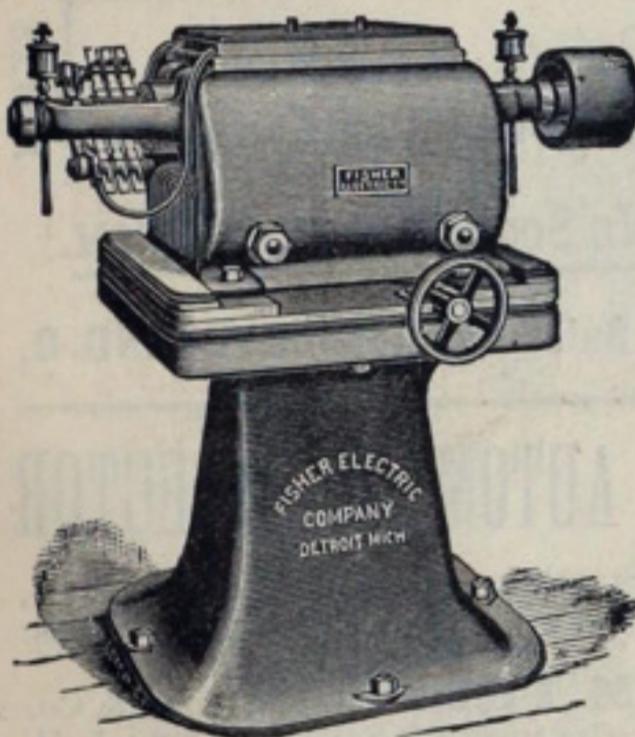
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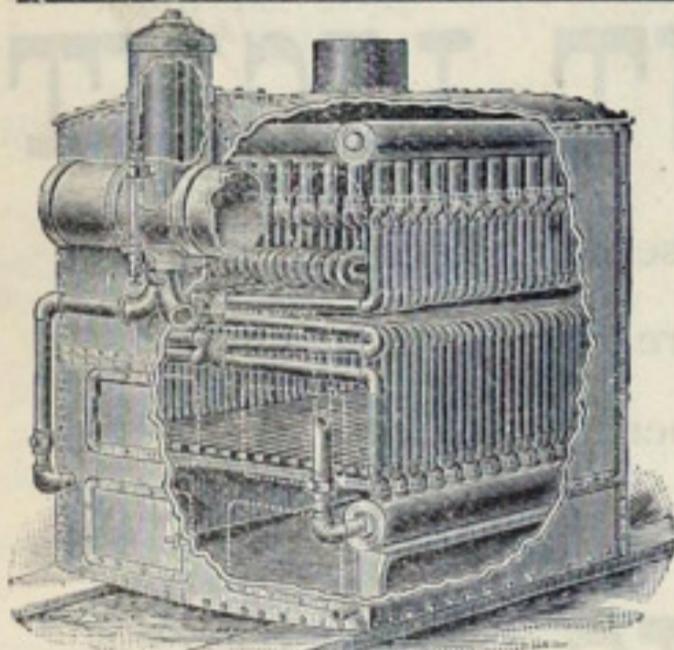
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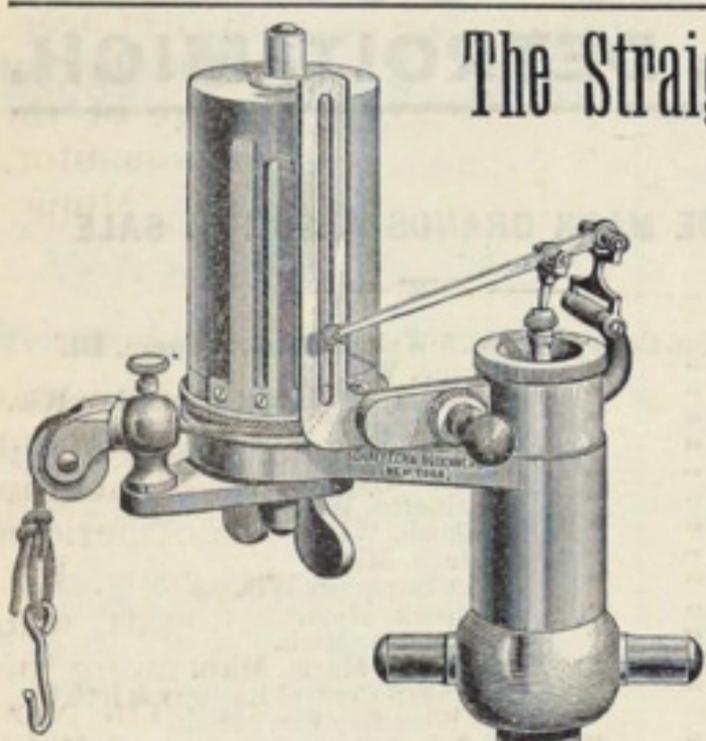
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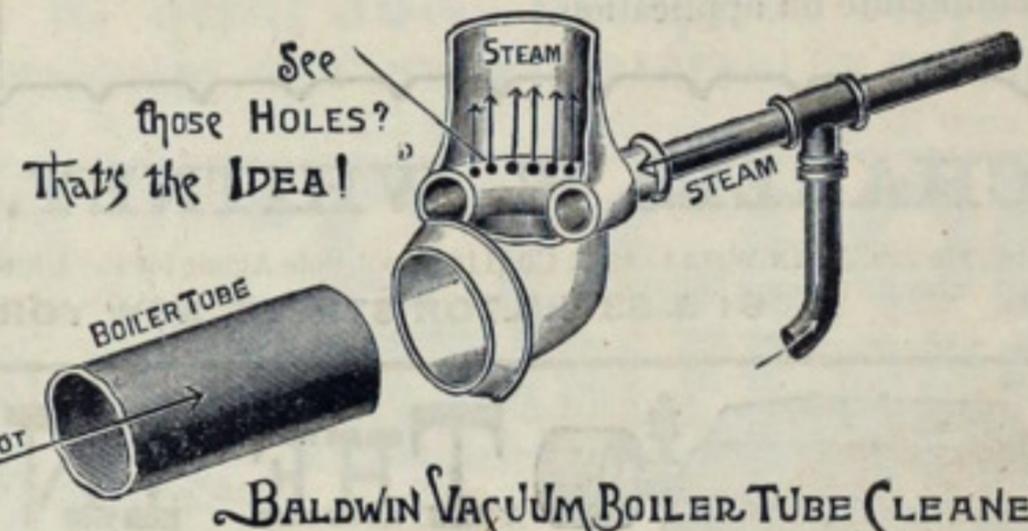
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